

**AMENDMENTS****In the Claims**

Claims 23-35 were previously canceled.

Please cancel claims 20-22 and 48-50 without prejudice.

Please amend claims 1, 7, 36, and 41 as shown herein.

Claims 1-19 and 36-47 are pending and are listed following:

1. (currently amended) An antenna element, comprising:

a front plate that includes slots configured for wireless communication signal transfer;

a dielectric configured to regulate a cutoff wavelength of the antenna element;

a channel guide coupled to the front plate and configured to confine the dielectric in a position that aligns the dielectric with the slots in the front plate, the channel guide including a first sidewall and a second sidewall that are each configured to prevent communication signal interference between the antenna element and an adjacent antenna element; and

a back plate coupled to the channel guide and configured to enclose the dielectric within the channel guide to form an enclosed dielectric channel.

2. (original) An antenna element as recited in claim 1, wherein the dielectric is formed from a polystyrene material.

1           3.     (original)   An antenna element as recited in claim 1, wherein the  
2 dielectric includes a center conductive section and one or more cross-sections.

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4           4.     (original)   An antenna element as recited in claim 1, wherein the  
5 dielectric includes a center conductive section and one or more cross-sections  
6 transverse to the center conductive section.

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8           5.     (original)   An antenna element as recited in claim 1, wherein:  
9 the dielectric includes a center conductive section and one or more  
10 cross-sections perpendicular to the center conductive section;

11 the center conductive section extends lengthwise within the enclosed  
12 dielectric channel; and

13 the one or more cross-sections are spaced within the enclosed dielectric  
14 channel to align with the slots in the front plate.

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16           6.     (original)   An antenna element as recited in claim 1, wherein:  
17 the dielectric includes a center conductive section and one or more  
18 cross-sections perpendicular to the center conductive section;

19 the center conductive section extends lengthwise within the enclosed  
20 dielectric channel between a first row of the slots and a second row of the slots;  
21 and

22 the one or more cross-sections are spaced within the enclosed dielectric  
23 channel to align with the slots in the front plate.

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1           7.     (currently amended)     An antenna element as recited in claim 1,  
2     wherein ~~the channel guide includes at least a first sidewall and a second sidewall,~~  
3     ~~and wherein the first sidewall and the second sidewall are each configured to~~  
4     ~~prevent communication signal interference between~~ at least one of the first  
5     sidewall or the second sidewall is a common sidewall of the antenna element and  
6     an the adjacent antenna element.

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8           8.     (original)     An antenna element as recited in claim 1, wherein the  
9     front plate further includes the slots spaced apart a distance that is substantially  
10    equivalent to an antenna element wavelength divided by two.

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12          9.     (original)     An antenna element as recited in claim 1, wherein the  
13    front plate further includes a first row of one or more of the slots and a second row  
14    of one or more of the slots.

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16          10.    (original)     An antenna element as recited in claim 1, wherein the  
17    front plate further includes a first row of one or more of the slots and a second row  
18    of one or more of the slots, and wherein the slots in each of the first row and the  
19    second row are spaced apart a distance that is substantially equivalent to an  
20    antenna element wavelength divided by two.

1           **11. (original)**   An antenna element as recited in claim 1, wherein the  
2 front plate further includes a first row of one or more of the slots and a second row  
3 of one or more of the slots, and wherein the slots in the first row are offset from  
4 the slots in the second row.

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6           **12. (original)**   An antenna element as recited in claim 1, wherein:  
7 the front plate further includes a first row of one or more of the slots and a  
8 second row of one or more of the slots; and  
9 the slots in the first row are offset from the slots in the second row in a  
10 direction parallel to the first row and a distance that is substantially a length of a  
11 slot.

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13           **13. (original)**   An antenna element as recited in claim 1, wherein the  
14 slots in the front plate are substantially rectangular.

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16           **14. (original)**   An antenna element as recited in claim 1, wherein the  
17 slots in the front plate are notched slots.

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19           **15. (original)**   An antenna element as recited in claim 1, wherein the  
20 slots in the front plate are offset slots.  
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1           **16. (original)**   An antenna element as recited in claim 1, wherein the  
2 slots in the front plate are offset slots, and wherein an offset slot is substantially  
3 rectangular having an offset section formed about a transverse center of the offset  
4 slot.

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6           **17. (original)**   An antenna element as recited in claim 1, further  
7 comprising a connection system configured to communicatively couple the  
8 antenna element to an antenna system component.

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10          **18. (original)**   An antenna element as recited in claim 1, further  
11 comprising:

12           an RF connection system configured to communicatively couple the  
13 antenna element to an antenna system component; and

14           a fastener component configured to communicatively couple the dielectric  
15 to the RF connection system without an RF connector.

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17          **19. (original)**   An antenna assembly comprising one or more antenna  
18 elements as recited in claim 1.

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20          **20-35. (canceled)**

1           **36. (currently amended)**    A method, comprising:  
2           forming a front plate of an antenna assembly with slots configured to  
3           wirelessly transfer communication signals;  
4           forming a channel guide of an antenna element, the channel guide including  
5           at least a first sidewall and a second sidewall that are each configured to prevent  
6           communication signal interference between the antenna element and an adjacent  
7           antenna element;  
8           forming a back plate of the antenna assembly; and  
9           attaching the front plate, the channel guide, and the back plate together to  
10          form the antenna element of the antenna assembly, the antenna element being  
11          formed as a conductive channel that encloses a solid dielectric.

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13          **37. (original)**    A method as recited in claim 36, further comprising  
14          forming the solid dielectric to regulate a cutoff wavelength of the conductive  
15          channel.

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17          **38. (original)**    A method as recited in claim 36, further comprising  
18          forming the solid dielectric with a center conductive section and one or more  
19          transverse cross-sections.

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21          **39. (original)**    A method as recited in claim 36, further comprising  
22          forming the solid dielectric with a center conductive section and one or more  
23          cross-sections perpendicular to the center conductive section.  
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1           **40. (original)**   A method as recited in claim 36, further comprising:  
2           forming the solid dielectric with a center conductive section and one or  
3           more cross-sections perpendicular to the center conductive section; and  
4           positioning the solid dielectric such that the center conductive section  
5           extends lengthwise within the conductive channel and the one or more  
6           cross-sections are spaced to align with the slots in the front plate.

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8           **41. (currently amended)**   A method as recited in claim 36, wherein  
9           forming the channel guide includes forming the channel guide of the antenna  
10          element such that at least one of the first sidewall or the second sidewall is a  
11          common sidewall of the antenna element and the adjacent antenna element with at  
12          ~~least a first sidewall and a second sidewall, and wherein the first sidewall and the~~  
13          ~~second sidewall are each configured to prevent communication signal interference~~  
14          ~~with an adjacent conductive channel.~~

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16          **42. (original)**   A method as recited in claim 36, wherein forming the  
17          front plate includes forming the front plate with a first row of one or more of the  
18          slots and a second row of one or more of the slots.

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20          **43. (original)**   A method as recited in claim 36, wherein forming the  
21          front plate includes forming the front plate with a first row of one or more of the  
22          slots and a second row of one or more of the slots, and wherein the slots in the first  
23          row are offset from the slots in the second row.

1           **44. (original)**   A method as recited in claim 36, wherein forming the  
2 front plate includes forming the front plate with the slots that are substantially  
3 rectangular.

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5           **45. (original)**   A method as recited in claim 36, wherein forming the  
6 front plate includes forming the front plate with the slots that are offset slots.

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8           **46. (original)**   A method as recited in claim 36, wherein forming the  
9 front plate includes forming the front plate with the slots that are offset slots, and  
10 wherein each offset slot has an offset section formed about a transverse center of  
11 the offset slot.

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13           **47. (original)**   A method as recited in claim 36, further comprising  
14 coupling the solid dielectric to an RF conductive trace of an RF connection system  
15 without using an RF connector.

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17           **48-50. (canceled)**  
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